

**LISTING OF THE CLAIMS:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

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- 1-6. (Canceled).
7. (Previously Presented) An infrared source for a gas sensor comprising:
  - a first layer having first transmission characteristics produced by absorption of infrared radiation; and
  - a second layer having second transmission characteristics produced by absorption of infrared radiation,
    - wherein a combination of the first and the second transmission characteristics effects a bandpass filter characteristics for an operating frequency range, and wherein the first and second transmission characteristics are different transmission characteristics.
8. (Previously Presented) The infrared source according to claim 7, wherein the first transmission characteristics with respect to the operating frequency range provides a higher transmission for shorter wavelengths, and the second transmission characteristics with respect to the operating frequency range provides a higher transmission for longer wavelengths.
9. (Previously Presented) The infrared source according to claim 7, wherein the first layer includes glass, and the second layer includes one of silicon and germanium.
10. (Previously Presented) A gas sensor comprising:
  - an infrared source;
  - a detector; and
  - an interference filter situated between the infrared source and the detector,
    - wherein the infrared source includes:

a first layer having first transmission characteristics produced by absorption of infrared radiation, and

a second layer having second transmission characteristics produced by absorption of infrared radiation,

wherein a combination of the first and the second transmission characteristics effects a bandpass filter characteristics for an operating frequency range, and wherein the first and second transmission characteristics are different transmission characteristics.

11. (Previously Presented) The gas sensor according to claim 10, wherein the operating frequency range of the infrared source includes exactly one pass frequency of the interference filter.

12. (Previously Presented) The gas sensor according to claim 10, wherein the interference filter is a Fabry-Perot filter.

13. (Previously Presented) The infrared source of claim 7, wherein the first layer and second layer are both positioned along a same line of transmission of infrared radiation from the infrared source.

14. (Previously Presented) The infrared source of claim 13, wherein the infrared source is configured so that infrared radiation from the infrared source travels along the line of transmission through the first layer before traveling through the second layer.

15. (Previously Presented) The infrared source of claim 7, wherein the first layer has a top surface directly contacting a bottom surface of the second layer.

16. (Previously Presented) The gas sensor of claim 10, wherein the first layer and second layer are both positioned along a same line of transmission of infrared radiation from the infrared source.

17. (Previously Presented) The gas sensor of claim 16, wherein the infrared source is configured so that infrared radiation from the infrared source travels along the line of transmission through the first layer before traveling through the second layer.
18. (Previously Presented) The gas sensor of claim 10, wherein the first layer has a top surface directly contacting a bottom surface of the second layer.
19. (Previously Presented) The gas sensor of claim 10, wherein the operating frequency range of the infrared source includes exactly one pass frequency of the interference filter, wherein the first layer and second layer are both positioned along a same line of transmission of infrared radiation from the infrared source, wherein the infrared source is configured so that infrared radiation from the infrared source travels along the line of transmission through the first layer before traveling through the second layer, wherein the interference filter is a Fabry-Perot filter, and wherein the first layer has a top surface directly contacting a bottom surface of the second layer.
20. (Previously Presented) The gas sensor of claim 19, wherein the first transmission characteristics with respect to the operating frequency range provides a higher transmission for shorter wavelengths, and the second transmission characteristics with respect to the operating frequency range provides a higher transmission for longer wavelengths, and wherein the first layer includes glass, and the second layer includes one of silicon and germanium.
21. (Previously Presented) The gas sensor of claim 10, wherein the first transmission characteristics with respect to the operating frequency range provides a higher transmission for shorter wavelengths, and the second transmission characteristics with respect to the operating frequency range provides a higher transmission for longer wavelengths, and wherein the first layer includes glass, and the second layer includes one of silicon and germanium.
22. (Previously Presented) The infrared source of claim 7, wherein the operating frequency range of the infrared source includes exactly one pass frequency of the interference

filter, wherein the first layer and second layer are both positioned along a same line of transmission of infrared radiation from the infrared source, wherein the infrared source is configured so that infrared radiation from the infrared source travels along the line of transmission through the first layer before traveling through the second layer, wherein the interference filter is a Fabry-Perot filter, and wherein the first layer has a top surface directly contacting a bottom surface of the second layer.

23. (Previously Presented) The infrared source of claim 22, wherein the first transmission characteristics with respect to the operating frequency range provides a higher transmission for shorter wavelengths, and the second transmission characteristics with respect to the operating frequency range provides a higher transmission for longer wavelengths, and wherein the first layer includes glass, and the second layer includes one of silicon and germanium.

24. (Previously Presented) The infrared source of claim 7, wherein the first transmission characteristics with respect to the operating frequency range provides a higher transmission for shorter wavelengths, and the second transmission characteristics with respect to the operating frequency range provides a higher transmission for longer wavelengths, and wherein the first layer includes glass, and the second layer includes one of silicon and germanium.